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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,015	08/27/2001	Bala Subramaniam	318888	3706

7590 06/15/2004

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EXAMINER

DANG, THUAN D

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

## Application No.

09/940,015

## Applicant(s)

SUBRAMANIAM ET AL.

## Examiner

Thuan D. Dang

## Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4, 9-20, 25-31 and 48-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9-20, 25-31, 48-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of claims 1-4, 9-20, and 25-31, in Paper No. 5 and alkylolation in the telephone conversation of 6/9/03 is acknowledged.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1-4, 9-20, 25-31, and 48-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 48, 49, and 50, the term "near-" is indefinite since it is unclear if it means (near supercritical) or (near critical). Even, it means near-critical or near-supercritical, these both terms are also indefinite since it is unclear which condition is considered to be "near-critical" or "near-supercritical".

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 4, and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Subramaniam et al (5,907,075).

Subramaniam discloses an alkylation process in the presence of a solid catalyst having a surface area of from 5-1000 m<sup>2</sup>/g under supercritical conditions at a temperature of from about 0.9-1.3 Tc.

Subramaniam is silent as to the pore size of the catalyst (see the entire patent for details). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Subramaniam process by selecting an appropriate pore

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size for the catalyst since it is expected that the Subramaniam catalyst having any pore size would yield similar results.

The examiner notes that at the first time when the reactants are fed to the reactor, the reaction mixture is the reactant mixture since at that time, the product is not produced yet.

Subramaniam does not disclose employing a pressure as called for in claims 11 and 12. However, Subramaniam discloses that the pressure exceeds the critical pressure (col. 2, lines 13-14.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Subramaniam process by selecting a pressure higher than the critical pressure to arrive at the applicants' claimed pressure.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Subramaniam et al (5,907,075) in view of McClure et al (4,056,578).

Subramaniam discloses a process as discussed above.

Subramaniam does not disclose using a catalyst as called for in claim 3. However, McClure discloses a similar catalyst for alkylation of paraffins with olefins (the abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Subramaniam process by employing the McClure catalyst since the McClure's catalyst is superior to other solid catalysts (col. 5, lines 20-27).

***Response to Amendment***

The Declaration filed on 5/11/2004 under 37 CFR 1.131 has been considered but is ineffective to overcome the Subramariam reference.

The declaration that the reaction mixture also includes the reaction products is not correct since applicants do not claim the reaction mixture containing the product. The reaction mixture, at the time reactants is added to the reactor, includes only reactants.

***Response to Arguments***

The argument that the temperature that are near-critical or supercritical relative to the reaction mixture are different from temperatures that are near-critical or supercritical relative to the reaction reactant mixture is correct due to the presence of the product. However, the term "reaction mixture" must be clearly defined by citing what are contained in it. "reaction mixture" contains only reactants at the time they are fed to the reactor. In other words, when the reaction do not yet start.

***Allowable Subject Matter***

Claims 16 and 48-50 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Claims 13-15, 17-20, and 25-31 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 571-272-1445. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuan D. Dang  
Primary Examiner  
Art Unit 1764

09940015.20040610  
June 10, 2004

A handwritten signature in black ink, appearing to read 'Thuan D. Dang', is written over a horizontal line. The signature is stylized with a large, sweeping 'T' and a long, horizontal stroke that ends in a sharp upward flick.